

AMATEUR RADIO

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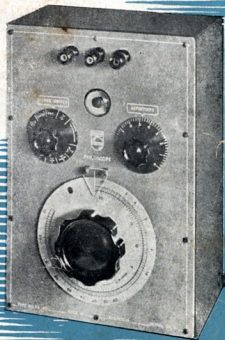
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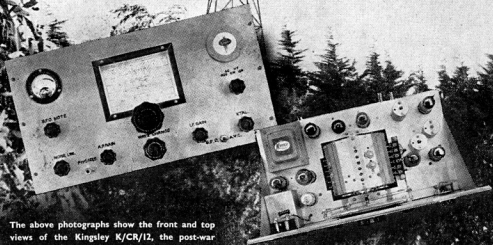


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EDITORIAL

The International Telecommunication Conference, the first since that held at Cairo in 1938, is, as we write, in session at Atlantic City, U.S.A.

What this Conference means to Radio Amateurs throughout the world is something that is well known to all who read this journal, we need not explain its significance here.

It is, however, of interest to note that all of the major powers represented at this present Conference have expended more time and thought on preparations for the great event than has been the case prior to any of the four previous Conferences. That such intensive preparations should be necessary is indicative of two things, that the advancements in the art and science of radio communication in the last two decades have been many, and that the claims now made on spectrum space by various interested parties have snowballed to the point where long deliberations by large staffs of experts have become essential.

Possibly this state of affairs lies in some manner behind the spate of idle and utterly nonsensical rumours which have been going the rounds in recent months; we even heard one to the effect that U.N.O. proposed to take over all our bands for broadcasting! It seems a great pity that there are among us some who have so little to occupy their time that they have to sit down and while away the hours in concocting that sort of furphy.

In actual fact the proposals of the major powers, insofar as they

were revealed at the preliminary Conference at Moscow last year, look reasonably hopeful. The U.S.A. proposals were, as usual, the most liberal, envisaging the retention by Amateurs of all the existing bands with the exception of the 160 metre band, but in its stead a new band at 21 Mcs. The proposals revealed by Great Britain, France and the U.S.S.R. were, surprisingly enough for the latter two, along similar lines. The exceptions were the proposed invasion of the 7 and 14 Mc. bands by B.C. stations, the elimination of the 3.5 Mc. band by the Russians, and the failure of Great Britain to include a band at 21 Mc.

We have been advised by the I.A.R.U. that the British proposals have since been modified to include a small band near 21 Mc., but on the other hand drastically cutting the other bands to 3.5-3.6 Mc., 7-7.2 Mc., the 14 Mc. band as is, and 28-29.7 Mc. The British idea now is that as sharing of bands between Amateurs and B.C. services is unsatisfactory to both, the B.C. boys should have it all their way. What manner of logic that is, particularly in view of the war record of countless British and Dominion Hams, we do not profess to know.

We can only trust to the undoubted ability of our representatives, the I.A.R.U. delegation, and hope that the more enlightened view of the U.S.A. authorities will prevail, which we believe, if there be still such a thing in this shattered world as justice, it surely must.

A.H.C.

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V.H.F. RECEIVER DESIGN

By D. J. MEDLEY,* VK3MJ

This paper is more or less a verbatim report of lecture delivered by VK3MJ at the April meeting of the V.H.F. Group (Victorian Division).

Any superheterodyne receiving system can be divided up into a number of major sections as follows:

- Audio.
- Intermediate Frequency Amplifier, Second Detector, Noise Limiter, b.f.o., a.v.c.
- Converter or mixer and local oscillator.
- Input circuit, including aerial coupling circuit and r.f. amplifiers.

Treating these in order it is not considered that any remarks need be passed on audio systems and second detector circuits as these are largely a matter of personal preference, and a large number of different circuits are capable of excellent and satisfactory results. Similarly circuits for b.f.o.s., a.v.c., "S" meters, etc., are hardly within the scope of our discussion. However there is one circuit which is associated usually with the second detector and audio system which does bear vitally on V.H.F. work and I refer to the noise limiter. As is well known, there are many and varied types of noise limiter, some very complicated like the Lamb i.f. type and others very simple. I do not want to spend much time on this subject but I would like to commend to your attention a circuit which I think can be ascribed to the Hammarlund Co. It takes the form of a series diode limiter (see Figure 1), but it differs from the usual type in that a.v.c. is involved so that the limiter adjusts itself automatically to the level of the signal. For absolute simplicity it is the most satisfactory circuit I have yet struck, although results show that its effectiveness varies with the i.f. gain of the receiver. The higher

the gain, the greater the suppression. On an A.M.R. 200 receiver the results are amazing. Details of other types of silencers can be got from any handbook.

I.F. AMPLIFIER

Next we come to the i.f. amplifier. Ideally this should provide the majority of the gain and nearly all the required selectivity and image ratio. The three factors don't go hand in hand and some compromise has to be arrived at. When designing an i.f. amplifier the first point to be decided on is the i.f. frequency. Actually the choice of this is not as wide as may be supposed as there are various specific channels set aside for this purpose, and kept clear of interference, theoretically at any rate.

The frequencies are 176 Kc., 455 Kc., 1900 Kc., 7.5 Mc., 10.7 Mc. and 30 Mc. 75 Mc. is also regarded as a standard and 10.7 Mc. is the recommended standard for V.H.F. receivers. As far as we are concerned our choice would be between 455 Kc., 1.9 Mc. and 10.7 Mc., and the following factors should be taken into account:—

- Selectivity; the higher the i.f. the lower the selectivity.
- Gain; the higher the i.f. the lower the gain.
- Image ratio; the higher the i.f. the better the image ratio.
- Oscillator pulling; the higher the i.f. the less the pulling.

Taking a compromise I suggest the following i.f.s. could be selected:—

For frequencies up to 14 Mc.—455 Kc.

For frequencies between 14 and 60 Mc.—1900 Kc.

For frequencies between 60 and 200 Mc.—10.7 Mc.

Tubes.—Having decided the frequency, the next consideration is the tubes. In general, high gain tubes are desirable because by their use fewer stages are needed, but we must consider selectivity. The more stages the greater the selectivity. Therefore if we require reasonable selectivity and the minimum trouble from instability, it is suggested that for all the three i.f. frequencies specified, low gain tubes such as 6U7, 6K7 and 6SK7 be used with the appropriate number of stages, viz.:—

455 Kc.—one or two stages.

1900 Kc.—two stages.

10.7 Mc.—three stages.

The use of 6AC7, EF50 type of tubes is not recommended as it is quite difficult to get high gain consistent with good stability.

The design of crystal filters and various other allied circuits will not

be dealt with as it hardly appears appropriate in a general discussion of this type.

MIXER-OSCILLATOR OR FREQUENCY CONVERTERS

The next section we come to is the mixer-oscillator combination or frequency converter. The selection of tube or tubes depends entirely on the frequency of the incoming signal, and I suggest the following points should be considered:—

- The use of a converter as distinct from a mixer oscillator is desirable for simplicity.
- High conversion gain is desirable as it reduces the number of r.f. stages required.
- low noise level is desirable.

Taking converters first, the following tubes are satisfactory for the frequency indicated in order of preference:—

Up to 14 Mc.—ECH35, 6SA7, 6K8, 6J8.

14 to 60 Mc.—ECH35, 6K8, 6D to 200 Mc.—NIL.

The ECH35 is capable of results equal to any other combination up to 60 Mc. and its use on all frequencies up to this is recommended.

Taking mixer-oscillator combinations, the following tubes are satisfactory for frequencies indicated in order of preference:—

Up to 14 Mc.—6L7, 6J7, etc.

14 to 200 Mc.—6AG5, 6AK5, RL7, 954, 9001, EF50, 6AC7.

All tubes listed are satisfactory provided an efficient r.f. amplifier system is used. Even the EF50 functions very well at 200 Mc.

Local oscillators could use any of the following:—

Up to 14 Mc.—Anything.
14 to 60 Mc.—955, 9002, 6J5G, EF50.

60 to 200 Mc.—955, 9002, EF50.

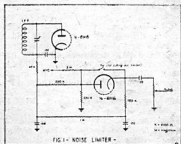
Following are some figures on converters and mixers which show their relative merits:—

Type	Conversion Conductance	Equivalent Noise Resistance
ECH35	650	32,000
6S7	350	78,000
6K8	350	91,000
6J8	290	36,400
6L7	375	55,500
6AG5	1,150	8,880
6AK5	1,170	9,150
954	320	32,000

These are rather striking as they show the advances that have been made in modern tube manufacture. It shows also clearly that the ECH35 is the only combination tube worthy of consideration and that the 6AG5/6AK5 types are the ultimate.

Having selected our mixer tube we now have to decide on the r.f. section. The first decision will be one or two stages. Two things must be considered:—

- The noise generated by the mixer.



*University Grounds, Melbourne.

(b) Mechanical.

If we use a low noise mixer then our r.f. stage would be sufficient. The ECH35 represents the lowest efficiency which could be tolerated under these conditions. Anything else requires two r.f. stages ahead for best results. The following table gives characteristics of the various tubes available.

Type	Transconductance	Equivalent Noise Resistance
6AG5	5,000	450
6AK5	5,100	380
RL7	7,000	700
EF50	7,000	1,200
6AC7	9,000	2,500
6U7	1,600	1,400

There is one very important factor which is not indicated in this table and that is input loading. As the frequency increases the input admittance increases. The input admittance is defined as the current flowing into the control electrode divided by the voltage that is applied between this electrode and the cathode. The admittance can be represented by a hypothetical condenser shunted by a resistance. The capacity is called the input capacity and the resistance is the input resistance.

At higher frequencies the input capacity represents the lowest value of C obtainable in the circuit and above a certain frequency, optimum L/C ratios cannot be obtained.

The input resistance depends on the frequency and consists of two components. The first due to the fact that the electrons take a finite time to travel from the plate to the cathode and the second due to cathode lead inductance. In practice these two factors are of comparable orders of magnitude.

Figures for input resistance are hard to come by but the following table gives some approximate values.

Tube	Input Capacitance	Input Resistance
6AG5	6.5 p.f.	20,000 at 60 Mc.
6AK5	4.3 "	20,000 "
RL7	5 "	10,000 "
EF50	7 "	3,000 "
6AC7	10 "	1,000 "

The 6AK5's gain appears slightly preferable because of its lower input capacity.

As we go up in frequency the gain and efficiency of the pentode starts to drop and its equivalent noise resistance increases. Let us consider what actually produces noise in a receiver.

RECEIVER NOISE

In a receiver, the amount of noise energy reaching the output will depend on the bandwidth. In fact it is directly proportional to the square root of the bandwidth. Obviously the wider the bandwidth the more noise spectrum will be received and the noise energy at the output will be increased. It should be clearly under-

stood that the noise output is in no way dependent on the received signal and is due to various causes as will be discussed later.

The main causes of receiver noise are as follows:—

- (a) Shot effect.
- (b) Thermal Agitation.
- (c) Partition noise.
- (d) Extraneous causes.

Let us consider each cause separately.

Shot Effect.—In a valve, the electron stream from cathode to plate is caused to vary in accordance with a voltage applied to the grid. The resulting plate current will vary in accordance with this grid voltage and in this way amplification takes place. If, however, the electron stream varies for some other reason, the plate current will vary in accordance with this other reason as well as in accordance with the grid voltage. This other variation gives rise to what is called noise. The shot effect results from the fact that the stream of electrons flowing from the cathode to plate is made up of a series of particles rather than a continuous fluid. As a result, the electron flow to the plate is somewhat irregular, resembling hailstones striking a metal surface, and this gives rise to slight irregularities in the plate current and hence noise.

An electric current may be regarded as a flow of electrons in a conductor and in any conductor there will be numbers of free electrons circulating within it. The speed at which the electrons circulate is dependent on the temperature being zero at absolute zero ($-273^{\circ}\text{C}.$). Therefore at normal temperatures there will be minute currents circulating in the various circuits of the receiver. In practice they are very small and the only important circuit is the grid circuit of the first valve, as minute currents will give rise to variations of grid voltage which will be amplified throughout the receiver as noise.

Partition Noise.—With multi-electrode valves this is probably the most serious source of noise, and is the factor which determines the maximum signal to noise ratio obtainable from a receiver using pentode valves as r.f. amplifiers. In such valves the electron stream passes first through the grid which is usually at a small negative potential with respect to the cathode and will not effect the electron stream appreciably so long as its voltage remains constant, the condition for no signal or constant signal (neglecting other causes of noise). It then passes through a screen grid which is at a high positive potential with respect to the cathode and will therefore attract electrons. Some electrons will strike the screen and thus pass into the screen circuit, thus giving rise to

normal screen current. The number that strike the screen and the number that pass through will vary according to a statistical law. Thus if ten electrons leave the cathode, one may strike the screen and nine pass through, or two might strike the screen and eight pass through. In other words the numbers will vary from instant to instant and thus the plate current will vary in a random manner giving rise to noise.

Further, after the electrons pass through the screen they have to traverse the suppressor grid before reaching the plate. This grid is usually at cathode potential and hence there is a point of low potential between the plate and suppressor. This will cause a slowing up of the electrons and will cause slow electrons to hesitate between striking the plate or returning to the screen. Thus we have a further cause for variation of plate current and thus more noise.

Extraneous Noise.—Little need be said about this as nothing much can be done about it in receiver design. It is due to voltages induced in the aerial by electro magnetic waves set up by electrical machinery, etc., and may be simply classed as man-made noise. It gives some trouble in receivers; and must always be suppressed at its source.

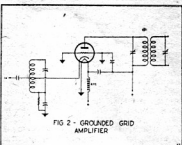


FIG 2 - GROUNDED GRID AMPLIFIER

THE R.F. AMPLIFIER

It has been stated that partition noise is the most serious offender and hence it would appear that the use of pentodes as r.f. amplifiers is not beneficial and that triodes should be used. However conventional triodes will oscillate when grid and plate circuits are tuned to the same frequency due to feedback through the high grid-plate capacitance. (This is very small in pentodes and hence they do not oscillate under these conditions.) In order to stabilise the triode we may neutralise it. This is in effect taking some of the energy from the plate circuit and introducing it into the grid circuit in such a way that it is in phase with the grid excitation and hence out of phase with the feedback energy from the plate circuit from the grid-plate capacity.

Then it can be seen that the valve will not oscillate provided that the two feedbacks are equal in amplitude.

Now consider the circuit shown in Figure 2. It will be at once noticed that the grid is at earth potential and that the input signal is applied between the cathode and the grid. Thus the grid effectively shields the plate from the cathode and prevents any feedback through the valve itself. Hence if the input and output circuits are screened from one another, oscillation is manifestly impossible. The construction of a CV66 type of grounded grid amplifier is fairly conventional except that each end of the grid is brought to a separate pin at the base and all leads are very carefully screened from one another. Owing to this construction and to circuit detail the thermal agitation noise is also reduced. This is due in part to the fact that the input impedance is very low and hence the grid circuit impedance is low. Hence thermal agitation will set up smaller voltages than if the circuit was of a higher impedance.

If the maximum benefit is to be obtained from such an amplifier the signal must be raised well above noise before it is introduced into the normal receiver. Therefore it is usual to use two such grounded grid stages. The use of two stages is not due entirely to the triode having a lower amplification factor than the pentode as conventional pentodes at very high frequencies have fairly low amplification. In fact using CV66 type valves at 200 Mc. a gain of 7 db per stage has been obtained while acorn pentodes give a gain of say 10 db but it must be remembered that the grounded grid amplifier gives this gain in signal to noise ratio over the maximum obtainable with conventional tubes.

This circuit gives no advantages at frequencies below 100 Mc. when such tubes as 6AK5s, etc., are available.

In the light of this information let us design a receiver whose efficiency is a maximum at 50 Mc.:

- (1) R.F. stage, 6AK5 seems the logical choice. Only one required.
- (2) Mixer, 6AG5.
- (3) Local Oscillator, 9002.
- (4) I.F. channel, 10.7 Mc. Three stages of 6SK7s.

Efficient and simple converter:—

- (1) R.F. stage, 6AK5.
- (2) Converter, ECH35.

Many other combinations will suggest themselves but these are considered the optimum.

CLEARING THE ETHER—SERIES

II PART X

By G. GLOVER,* VK3AG

THE AUDIO SYSTEM

To date we have dealt with the r.f. portion of the transmitter as far as the aerial tuning unit. In order to complete the picture we will proceed to discuss the audio side, power supplies and control circuits in that order.

As the microphone is the basis of the phone transmitter, we will commence at this point.

Microphones—There are numerous types of microphones in use today, each type has certain advantages and disadvantages dependent upon the job it is being called upon to perform. The ideal microphone for communication work should possess:—

- (1) Uni-directional pick-up characteristics, in order to reduce unwanted sounds to a minimum.
- (2) Low impedance output, so that reasonable length of cable can be used without undue interference (electrostatic).
- (3) Flat response from 200 to 3,000 cycles (accepted speech range).

Frequency Clipping.—For Amateur use we are only concerned with the transmission of the human speaking voice, in other words all we require is clear enunciation; hence, as long as the frequency range employed provides articulation required, transmission of frequencies above and below this range may be classified as unwanted.

Experience indicates that the range 200 to 3,000 cycles per second will provide the necessary "speech" channel. Suppression of lower frequencies conserves waste of modulating energy, and eliminates hum and low frequency pick-up problems. Suppression of high frequencies conserves band space (why hog the ether unnecessarily?), in any case this energy is usually lost over long transmission paths and/or in narrow band width receivers used for communication purposes.

Volume Compression and Automatic Gain Control.—In order to obtain the greatest results from a phone transmitter the carrier must be modulated one hundred per cent. on peaks, and high average level maintained. Let us consider what this means to the speaker. Firstly, he or she must maintain constant relationship to microphone insofar as distance and direction is concerned. Secondly, level of voice must be maintained constant. If variation occurs in one or both of these factors the result is

either overmodulation with consequent "splatter," or undermodulation resulting in considerable loss in side band power. Psychological effect upon the speaker of such an effort would be equivalent to a sentence of "hard labour," and as we are considering transmission from the viewpoint of a hobby we must do something to allow for the general tendency to wriggle in the chair, lean back and roll a smoke, or such like luxuries. By employing a "volume compressor," not only may we do all these things; but we can at the same time allow for the visitor who insists on interposing an occasional remark during a rag-chew. Talking of interposed remarks we must admit that it is going to be a bit awkward for the "Daddy" who is expected to act as nursemaid while "on the air," and will also call for some damping of other extraneous sounds. Still we must expect to make some sacrifices in order to obtain efficiency.

Conclusions.—From the foregoing discussion it becomes apparent that our ideal audio system will comprise:

- (1) A uni-directional microphone with suitable frequency coverage.
- (2) A frequency clipping circuit to restrict range from 200 cycles to 3,000 cycles.
- (3) A volume compressor or peak limiter to maintain average audio level at pre-determined value.
- (4) Splatter proof modulator.

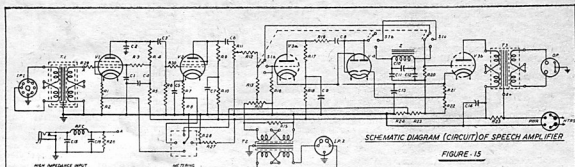
The best method of ensuring a good voice to noise ratio, and minimum interaction is to put the microphone pre-amplifier at the operating position and use a separate modulator unit; hence, the modulation system about to be described consists of two units, viz.:

- (a) Pre-amplifier and clipper unit (speech amplifier).
- (b) Modulator unit.

Speech Amplifier.—This unit is designed to provide sufficient drive for modulator unit on the basis that microphone output is —50 db below 6 mW. level at an input impedance of 50 Ohms.

Figure 15 depicts schematic circuit of unit and we will deal first of all with the salient points of circuit from theoretical aspect.

Stage 1.—The first feature worthy of note is the multi-shielded input transformer. This unit has (nominal values) 50 ohm primary and 60,000



RESISTORS: R1-100K; R2-50K; R3-27-0-27M; R4-25K; R5-10K; R6-100K; R7-100K; R8-100K; R9-100K; R10-100K; R11-100K; R12-100K; R13-100K; R14-100K. CAPACITORS: C1-0.001MFD; C2-0.001MFD; C3-0.001MFD; C4-0.001MFD; C5-0.001MFD; C6-0.001MFD; C7-0.001MFD; C8-0.001MFD; C9-0.001MFD; C10-0.001MFD; C11-0.001MFD; C12-0.001MFD. TUBES: 6SJ7, 6SN7, 6X4. POWER SUPPLY: 2-100V-0-100V. SPEAKER: 8 OHM, 16 OHM, 32 OHM, 64 OHM, 128 OHM, 256 OHM, 512 OHM, 1024 OHM, 2048 OHM, 4096 OHM, 8192 OHM, 16384 OHM, 32768 OHM, 65536 OHM, 131072 OHM, 262144 OHM, 524288 OHM, 1048576 OHM, 2097152 OHM, 4194304 OHM, 8388608 OHM, 16777216 OHM, 33554432 OHM, 67108864 OHM, 134217728 OHM, 268435456 OHM, 536870912 OHM, 1073741824 OHM, 2147483648 OHM, 4294967296 OHM, 8589934592 OHM, 17179869184 OHM, 34359738368 OHM, 68719476736 OHM, 137438953472 OHM, 274877906944 OHM, 549755813888 OHM, 1099511627776 OHM, 2199023255552 OHM, 4398046511104 OHM, 8796093022208 OHM, 17592186044416 OHM, 35184372088832 OHM, 70368744177664 OHM, 140737488355328 OHM, 281474976710656 OHM, 562949953421312 OHM, 1125899906842624 OHM, 2251799813685248 OHM, 4503599627370496 OHM, 9007199254740992 OHM, 18014398509481984 OHM, 36028797018963968 OHM, 72057594037927936 OHM, 144115188075855872 OHM, 288230376151711744 OHM, 576460752303423488 OHM, 1152921504606846976 OHM, 2305843009213693952 OHM, 4611686018427387904 OHM, 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(2) Lengthy grid wiring avoided and single shielded leads employed for any but exceedingly short leads.

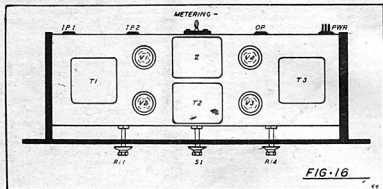
(3) Where mica capacitors are employed as r.f. by-passes, wiring should be kept as short as possible, terminating on tube socket where practicable.

(4) For safety reasons plug must be used for power connection. If socket was used on chassis and plug on cable, live contacts would be exposed upon the withdrawal of plug from socket.

(5) V1 and V2 should be shock mounted in order to avoid likelihood of "microphonics," due to vibration of unit. This is a comparatively easy matter. Simply employ rubber grommets on mounting screws and use very flexible connections to the socket.

Metering.—The four-way polarised jack employed enables wandering meter to be plugged in to read:—

- (1) Cathode current of V1.
- (2) " " " V2.
- (3) " " " V3.
- (4) H.T. Voltage. " V3.



The actual jack assembly consists of centrally placed banana type plug with four sockets at 90° intervals on 1½" P.C.D., arranged to accommodate polarised plug with standard ½" spacing.

The electrical arrangement of position (4) is such that R28 may be selected to give correct reading for meter having known internal resistance. For instance, if the internal resistance of meter is 100 ohms then R28 will have value of 500 ohms for full scale deflection of 300 volts. This resistor serves yet another purpose, that is, it ensures that voltage on the jack is extremely low and therefore rendered "safe."

Values of resistance quoted for cathode shunts in each case are for 100 ohm 1.0 ma. movement, and provide full scale deflection of 2 ma. for V1, 10 ma. for V2 and V3.

Final Conclusions.—It is obvious from the foregoing paragraphs that there is plenty of scope for individualism in audio amplifier design, the main consideration being carefully planned lay-out and attention to small, but significant, details.

What ever form of construction is adopted provision must be made to completely enclose unit, in order to exclude dust and electro-static pick-up, etc. The design considered in this section is easily constructed, versatile and accessible.

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plier.

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14W7—1st Limiter.

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7A6—2nd Limiter.

to feed 2 headsets.

7A6—Discriminator.

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SUCH NICE PEOPLE

By "GREMLIN."

Seems as though I gave the beehive another kick with my remarks on the confusion in fone reporting. A lot seem to think I'm biased by "western" influence. Others reckon what was good enough in the old days still suits them. Matters little to me what system you use provided you use it correctly. Suggest some people buy a NEW copy of the Q Code and note the difference between QRK and QSA. At the same time take a peep at QRA and QTH. Time staggers on and it really isn't so hard keeping up with it.

Heard 30C on c.w. recently. It's hard to believe the bug has been dormant so long now. Welcome back Ray with a nice crystal note. I guess you notice things different these days. No, nothing will surprise me now, not even should the Federal President emit a signal!

How do you like the key clicks these days? Plenty of them including 2ACX, 3AIR, 2AIB, 3PH, 3AHH 2AHQ and 3BP.

Thank goodness the battle of the v.f.o. hasn't hit us as hard as W land. It's commencing in VK2. Listening to

a W6 working ZM6AC the other night reminded me of tucker time in a pig nursery. Get in if you can and no matter if the other bloke hasn't finished. There is a VK2 who thinks it smart to slide up on a signal and interject. I'm not giving your call, same as you when you bust in, however your HAM operating is easily identified at any time on forty.

There was a time when the bad signal stood out, today the good are in the minority. If we all gave an honest report I think it would help a lot towards cleaning things up. If the other bloke has got a rough note with chirps and clicks, tell him so, don't say T9. If I work 2GV, 3DQ, 2PX, 3IC or 3EO it won't be T9.

Listened to 3AES call CX for five minutes the other night. Guess you meant CQ o.m. If you haven't a monitor suggest you get to work and have a listen to your dash clipping.

I'm certain nobody is interested in how 4WF eats his buns, be they buttered or neat. Your jam preference is a common brand and really doesn't need any advertising.

3ALE was staggering all over twenty on the 19th April, or rather 60 Kcs. of twenty, with a terrible note barely readable.

Was trying to do a spot of good for myself in the B.E.R.U. 21Q and 6BW with fone on the low end of twenty didn't help. At least 6BW wasn't splashing over 50 Kcs.!

3BP if you must send chirpy v's, please speed it up from 7 w.p.m.—1 timed them. It helps to keep me awake waiting for your call.

3YN could spare a watt or two of audio and still fill the carrier. Suggest you give the surplus to 5LC so he can throw away his poor quality stuff.

For a good clean c.w. signal, have a listen to 3DN.

VK7, you aren't being neglected. Truth is I only hear a few of you up my way and so far all good boys. Of course there are other occupations until 2200 in that fairland of yours and maybe I'm in bed before the wantons return to Ham Radio.

May I suggest to some of the vociferous gentlemen on forty and twenty who burn their 50 watts to yarn around the suburbs, that the use of the V.H.F. bands would serve the purpose equally well. You may also learn something down there, think it over.

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FEDERAL NOTES.

DECISIONS OF THE FEDERAL CONVENTION

Last month in these notes we gave you a resume of the opening and closing remarks at the Federal Convention, held in Melbourne in April. This month, as promised, we have set out in slightly abridged form the decisions reached at the Convention. These decisions are of importance to all members, as they now form the basis of W.I.A. Federal policy for the coming year. They are as follows:—

INSTITUTE ADMINISTRATION

In the Federal Constitution as finally adopted, clauses are to be inserted among the Objects of the W.I.A., covering the encouragement and assistance of persons and bodies interested in Amateur Radio, and the promotion of interest and participation in such pursuits.

The Federal Executive is instructed to compile a uniform Constitution for the Divisions, and the Convention laid down sixteen major points on which it considered uniformity to be desirable. We do not propose to go into these points here, but it is sufficient to say that uniformity to the degree laid down would ensure that the qualifications, responsibilities and privileges of the members of any Division would be the same as those of any other Division.

It was agreed that there must be the greatest possible flow of regular information from the Federal Executive to the Divisions, and it was decided that the Federal Executive should submit a monthly report of its activities to each Division.

This magazine came in for very full discussion, and it was agreed that it was impracticable at this stage for the Federal Council, through the Federal Executive, to take over full responsibility for its management, finance and publication. It was decided however that as the magazine is the Federal organ of the W.I.A., each of the Divisions must take a greater part than heretofore in its financing, and in other aspects of its production, including the provision of technical articles. To further this policy it was decided that in each Division there should be appointed a Sub-Editor, to handle within his Division such matters as Divisional Notes, circulation, technical articles, and advertising. Also all Divisions are to examine avenues of increasing the circulation within their areas.

In order to assist the objective of enrolling every licensed Amateur in the Institute it was decided that the W.I.A. should compile and publish a Station Handbook, as a companion publication to the P.M.G. Handbook,

covering such matters as guiding principles of station operation, standards of design, safety standards, etc. Then followed one of the most important decisions in the history of the W.I.A., the decision instructing the Federal Executive to appoint a full-time Secretary. Certain minimum requirements were laid down, and more will be heard of this move when the Federal Executive has gone thoroughly into the matter.

In order to assist the Federal Executive to handle its funds with greater efficiency, it was decided that all Divisions should investigate the possibility of bringing into line the date of commencement of their fiscal years. This would be of considerable advantage as it would enable the Federal Executive to budget its expenditure.

It was agreed that any Division failing to pay its dues to the Federal body by the due date should not be entitled to a vote in Federal Council decisions, the Federal Council is, however, to have the power to grant an extension of time if it considers it warranted.

The matter of the expenses to Divisions of sending their representatives to Federal Conventions was discussed, and it was agreed that, where Divisional funds were inadequate to meet such expenses the latter should be paid from Federal funds and recouped by a levy on all Divisions.

Machinery for the transfer of members from one Division to another was agreed upon, to be incorporated in the uniform Divisional Constitution referred to previously.

The vexed question of Radio Clubs was then discussed at length, and proposals were made and adopted. The scheme worked out is subject to ratification by the Divisions, but if it becomes Institute policy it will undoubtedly be beneficial to both the Clubs and the W.I.A., and should promote harmony between the two. Since, as the Convention agreed, there are good reasons for the existence of both kinds of organisations, and further as in many cases the same Amateurs are members of both, there is every reason why they should get together.

REGULATIONS

Quite a few resolutions were carried relating to the subject of the P.M.G. Regulations. As many of these cover matters which are currently under review by the P.M.G. at the instigation of the Institute, we are not in a position to comment in full, suffice to say that included among

them are the abolition of the present system of two-class licensing, abolition of the probationary period, permission for the use of F.M., Television and Pulse, and frequency allocations in the 21 Mc. and 425 Mc. regions.

The Federal Executive was also instructed to investigate the possibility of the division of the DX bands into phone and c.w. sub-bands as a purely Amateur matter on an international basis.

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INSTITUTE ACTIVITIES

Convention instructed the Federal Executive to look into the matter of the formation of a R.A.A.F. Reserve utilising Radio Amateurs.

It was agreed to organise Interstate Contests on all bands annually to perpetuate the names of Amateurs who lost their lives in the service of this country in the recent war.

A decision was made to divide the VK-ZL Contest into phone and c.w. on different days.

Arrangements are to be made with all member Societies of the I.A.R.U. for prior notification of details of all world Contests.

The Rules of the proposed Australian DX Century Club are to allow DX contacts made since the return of licenses, instead of since 1st January, 1947, as previously proposed.

The Institute is to investigate the possibility of taking steps to prevent commercial stations creeping into the Amateur bands as they now do.

Efforts are to be made for the co-operation of all concerned for the elimination of man-made interference at its source. Also efforts are to be made to see that Amateurs receive the same consideration as BCLs regarding such interference.

Each Division is to bring to the notice of its members the advisability of refraining from local rag-chewing on the 14 and 28 Mc. bands during DX hours, and to suggest the use of the V.H.F. bands for this purpose.

GENERAL BUSINESS

The Federal Executive is to obtain information on how a Royal Charter for the W.I.A. may be secured.

A collated statement on W.I.A. policy is to be prepared by the Federal Executive.

At future Conventions the Federal Treasurer is to present a budget for the ensuing year.

Members of Federal Executive are to be nominated in future prior to the Convention, and after approval by the Federal Council, are to be present at the Convention as observers.

In future, not more than three of the five members of the Federal Executive are to be new members at the beginning of the annual term of office of the Executive, in order to ensure reasonable continuity of thought among the Executive from one term to the next.

Official broadcasts over Divisional stations will in future include from time to time call signs used by illegal stations operating in the Amateur bands.

The official station of the Federal Executive, VK3WIA, is to be put on the air as soon as possible.

The term "F.I.C." or "Federal Headquarters" is now considered inept, and the Federal Executive is to be at all times referred to by its correct title.

FEDERAL QSL BUREAU

RAY JONES, VK3RJ, MANAGER

Information that has now come to hand re stations using VK9 call signs in Papua immediately post-war, proves conclusively that the stations were unlicensed, unauthorised and probably operated by service personnel awaiting return to Australia. In all probability service equipment was also used. All cards held for these stations have been returned to the senders. Papua is now covered by VK4 call signs and up to time of writing there are four stations licensed, namely VK4OS, VK4NK, VK4AI and our old friend Wendel Wilkie, late of C.T.O. Melbourne, who signs VK4BI. All of these stations are located in Port Moresby.

It is recommended to all members that their QSLs should be standard post card size, and that where passed to a W.I.A. QSL Bureau for distribution, the call of the addressee should be written prominently on the back. Adoption of this procedure will greatly help the QSL Managers in the carrying out of their task.

Details of all Australian Contests are to be referred to the Federal Council, before publication, for approval.

Federal Executive is to prepare a design for a new membership Certificate for use by all Divisions.

Steps are to be taken to unify the information used by Divisions in membership drives.

A revised draft of the proposed Federal Constitution, together with an alternative submitted by the W.A. Division, is to be submitted to all Divisions shortly.

So concludes our resume of the business transacted at the recent Federal Convention. We believe all members will agree that the members of the Federal Executive will not have much time to think about anything apart from the Institution during the coming year!

FEEDBACK

We note, in going through the Minutes of the Convention, that in publishing the Financial Statement last month, we omitted to add an explanatory note to the effect that the per-capita payments shown in the Statement are not necessarily in respect of the same period in the case of each Division. Actually the amount shown as paid by the Victorian Division includes an advance against the per-capita dues for the next period, which explains why Victoria has apparently paid much more than N.S.W. Also, in the case of the Queensland Division, their payment was received too late for inclusion in the Statement, which had already been sent to the Auditor.

A fat bunch of cards from W3EKK, Bernard Swedloff, covering his activ-

ities whilst in J9, also conveys a note to the effect that anyone who has not yet received a card, should not worry as he is QSLing each of the 1500 contacts in chronological order. Bernard also hands out the information that he will soon be in Manus Island in the Admiralties under a VK9 call sign. No need to tell me Bernard, I know, as your frequency on the 14 Mc. band, and that of thousands of v.f.o. birds who sit on your tail, unfortunately corresponds to mine, hi. T'would be interesting to know who authorised the VK9 appendage to Bernard's new call sign. Guess just a handout for new-country-starved W stations endeavouring to hit the 150 country mark.

The information given in a recent issue relative to the new QSL Bureau for Japan has been confirmed by the ex-QSL manager, Lt. Col. Drudge Coates, J4AAC. The QTH of the new Bureau is again given: Major Lloyd Colvin, 71st Signal Service Bn., APO 800, U.S. Forces, Japan.

The R.E.F. are evidently determined that the alteration to the address of their QSL Bureau, should be given due prominence as a notification has been received with each of the last 12 despatches from the R.E.F. The new address is: Service QSL R.E.F., 48 Rue St. Laurent, Lagny (S. and M.).

The QTH of FK8VB is care of QSL Manager N.Z.A.R.T., Box 489, Wellington, N.Z.

G5UB/P active on 28 Mc. from a marine location, left New Zealand on 10th May and expects to be in Australia and Australian waters for a few weeks from the middle of May.

B.R.S. 9172, J. M. Fuller, writes from 11 Clifton Terrace, Winchester, Hampshire, England, soliciting pen friends among amateurs, preferably those who share his interests, which are electric and hydraulic control systems, radio control of model aircraft and midget radio receivers, cars, motorboats and small yachts. He is 26 years old and hopes to emigrate to VK shortly.

Addresses of Australian QSL Bureaux are as follows:-

Victoria (outgoing cards).—Frank O'Dwyer, VK3OF, 190 Thomas Street, Hampton, S.7.

Victoria (incoming cards).—Graham Roper, VK3ZB, 26 Lucas St. Caulfield, S.E.8.

New South Wales.—Jim Corbin, VK2YC, 78 Maloney St., East-lakes, Sydney.

Queensland.—Eric Neale, VK4EN, 38 Felix St., Woolloowin, N.3, Brisbane.

South Australia.—George Luxon, VK3RX, 8 Brook St., West Mitcham, S.A.

Western Australia.—Jim Rumble, VK6RU, Box F319, G.P.O. Perth, W.A.

Tasmania.—T. A. Allen, VK7AL, 6 Thirza St., Newton, Tasmania.

MONTH'S DX

"Arn" Wilkey (VK4BI), writing from Port Moresby, says as a new member of the W.I.A., and quite active up there on 14 Mc., he took it into his head to give us the dope on his rig, etc.

He has been on the air since 19th March, on 14 Mc. c.w. (and phone for about 3 weeks) until he decided to rebuild the rig. The old job was 3 stage xtal, 6V6G, 6V6G, 807. The new one nearing completion is 6V6G c.o. (7 Mc.), 6V6G buffer, 807 doubler (quad, for 28 Mc.), and an 813 in the final. It will run about 90 watts.

The antenna used most there is a vertical zepp, and gives very f.b. results, especially in the W direction. (He wishes there was a dead-spot in that direction.)

He reads with interest, in April's "A.R." about v.f.o. attacks, on DX stations, by Ws. Has suffered at their hands on many occasions, the phone having got around per "grapevine" that his QTH is Papua.

Some disgusting procedure takes place, such as calling before a QSO is finished in which case he makes it his business to note the caller and ignore him in future. Another whinge is the practice of Ws calling back when he calls "CQ DX NO W." That breaks his heart, and can't work any DX for the W QRM. Maybe he should be pleased to be so popular over there, but is far from it.

If some bandwidth on each side of a calling station was made a rule for v.f.o. men, we might get a chance to work some real DX.

Active Hams up there are VK4NK, VK4BI and VK4AI, who doesn't seem to get going very often. VK4OS has packed his bag and gone back to VK3, and he does not think he'll be up there again in a hurry.

VK4BI would be interested in 50 Mc. if there were any reasonably close stations for sure QSOs, but to hope to break through to the mainland does not seem to be worth the trouble. Several VK4s have suggested that he get going and work skeds.

"I do not know of any active VK9s up in New Guinea or the other Mandated Islands. I may be going up to VK9 in my job in a month or so, and if I do, will be able to provide the VK9 QSOs for the DX hounds over the drink," said VK4BI.

WESTERN AUSTRALIA

28 Mc. Phone—This band showing decided improvement lately on what it has been since 1st January. It is anticipated that it will be even better than last winter, as many more Hams are now back on the air.

Europe.—Best from 1700 to 2200 almost daily and some excellent QSOs have resulted, among them being G8QX, G8OV, G3WH, G2CDI, G4NF from the old country, while the best from the Continent were PA0FB,

11M7, SM5VW, HB9ET, F8TY, O1X7, and ZBIE.

Africa.—This band wide open for most countries from Algeria to Cape Province and these boys may be worked very consistently now from 1300 to 2000, particularly during the week-ends. ZSs 6DY, 6EG, 3BS, 6GI, 5Q, 5DA and 1AX, ZE1JU, ZE1JB, VQ2PL, QG5BA, and SU1HF all made nice contacts.

Asia.—These boys have been active lately and apart from the usual VS1, C7J and VU QSOs, HZ1AB, VS7JB, VU7JU, EQ2L, Y12MW, Y12CA, and ZC6FF made good QSOs.

Oceania.—This area is providing more DX as the weeks go by, the ZLs in particular pounding through. KG8AE, W6ONP/KW6, KH6FC and W8OTK/KJ6 all being f.b. contacts.

Central America.—Not many of these boys about, but XE1KW and XE1RE were interesting contacts.

South America.—This Continent certainly provided some excitement during Easter when six VK6s made contact. Among the stations worked were YV1AN, HKs 3AO, 3SQ, 3DW and 3DD. The local boys who have W.A.C. on 28 Mc. phone now number seven.

North America.—Ws are in the majority this far of the DX from the Continent, and may be worked between 0800 to 1300, although one surprise was KL7FM around midday.

14 Mc. Phone—Europe.—Becoming more spasmodic late evenings as the winter draws on, although during the afternoon from 1400 to 1700 should provide, and has provided, some good QSOs when one can get through the VK2/3 QRM. Gs 6GN, 6GM, 3UQ, 5MY, 6ZO, 2WW, 5VB, 4OI, 8AC and 5OV, G14QY, GM7SQ, 4N4PZ, IUUE, F7AJ, being the best of those worked from 2400 to 0300 over week-ends.

Africa.—The boys from the dark Continent are still very active from 2000 onward nightly. ZSs 5M, 6LF, 2CI, 5Q, 6EU, 6BW, 6HT, 5EQ, 5CY and 4AY, ZE1JD and VA2HC making the best QSOs.

Asia.—These "locals" still pound through nightly, the Js and Cs seem to be multiplying in number rapidly from the new calls heard on the air. VS4BJ is the pick of the pile worked.

Oceania.—Some more of the rare birds getting active of late and are not difficult to work providing one is not beaten to it by a VK2 or VK3. K6ETE/KC6, Canton Island in the Phoenix Group, was a good QSO, and VR4AA, Guadalcanal in the Solomons, took some chasing and was QSOd after waiting nearly two hours listening to him go through VK2 and VK3.

Central America.—Hams from this location are also growing in number as quite a lot of new blood has been worked this last month. CO2KB, CO2KO, CO2MG, CO7CX, XE2BY, XE2KA, XE2HY and VP9F made interesting QSOs.

CORRESPONDENCE

W.A. Division, W.I.A.
23rd April, 1947

Editor, "A.R.,"

At the last meeting of the Council of the Division I was instructed to write to you on the matter contained in the contribution by "Gremlin" in the current issue of "Amateur Radio." The Council desires to express our resentment at the reference to VK6 and the policy regarding "newcomers" to Amateur Radio."

In contradicting the insinuation, we would point out that through the Radio Clubs in W.A., the student is encouraged to an extent apparently not known by "Gremlin." We assume that in welcoming the matter for this section you overlooked this paragraph.

If reference to individual experimenters is carefully and diplomatically done, it might prove of benefit.

Whilst also raising the foregoing we should like to see a fairer distribution of adverse comments, not hand-claps for VK3 and kicks for VK2.

Yours, etc.,

W. E. COXON, VK6AG,
Hon. Secretary.

* * * *

82 Forrest St.,
South Perth, W.A.
22nd April, 1947

Editor, "A.R.,"

"Gremlin" fills a long felt need, and his pertinent remarks about the long winded CQ merchants, pre-historic signals, etc., are long overdue.

However, he should confine his remarks to facts, and not to matters he obviously knows nothing about. His slanderous comment on the VK6s in the April issue is very much resented by the gang here, as there is not the slightest foundation for his insinuations.

A glance at the VK6 list of licenses shows a rapidly mounting increase in numbers, hardly to be expected from a locality where newcomers are discouraged. I would suggest that "Gremlin" gets in touch with some of the newcomers and asks them their opinions.

The VK6s are in the game because it is AMATEUR Radio, and any form of commercialism is frowned upon here. If we do not seek to make a profit from the newcomer by blatant advertising that we will teach him for a suitable fee, or if we do not employ paid instructors, it is because we dislike commercialising Amateur Radio, not because we wish to discourage the newcomer.

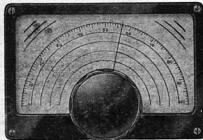
Yours, etc.,

S. C. AUSTIN, VK6SA.

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DIVISIONAL NOTES

NEW SOUTH WALES

Secretary: Peter H. Adams, VK2JX
Box 1734 G.P.O., Sydney.
Meeting Place: Science House, Gloucester and Essex Streets.
Meeting Night: Fourth Friday of each month.

The V.H.F. section of the Division was re-opened post-war on 9th May and monthly meetings will be held on the second Friday of each month at Science House, Sydney. The N.S.W. V.H.F. officer was elected Chairman. C. Fryar (2NP) will do the job, Vice-President F/O L. Page (2YQ), Secretary Mr. Lindsay, Publicity Officer John Moyle (2JU). The future of the Division was discussed at length and a complete list of V.H.F. station frequencies compiled. The meeting was well attended and 3VV was a visitor. The Treasurer of the Division, Basil Dale (2XX), is on the high seas and should appear shortly with a ZS call sign. Basil has left to take on a job as secretary of a spinning mills in South Africa. 2XX will be missed, he did a splendid job as Treasurer and had a torrid time dealing with Disposal gear finance.

Sixteen members have nominated for election to fill the seven vacancies on the Council, they are as follows: P. H. Adams (2JX), B. H. Anderson (2AND), T. R. Anthony (2TR), E. Barlow (2GQ), S. T. Clark (2ASD), J. B. Corbin (2YC), L. D. Cuffe (2AM), H. P. Dent (2AHU), G. W. Dukes (2WD), C. Hicks (2ADV), C. Hutchison (2YP), R. C. Meadows (2ARM), M. H. Meyers (2VN), J. M. Moyle (2JU), D. W. Reed (2DR), A. W. Thurston (2AV).

Office Bearers and Council will be shown in the next issue. Disposal gear to country members has been despatched and the possibilities of obtaining further gear seem remote.

WESTERN ZONE

2HC heard on 2.5 Mc. once or twice; still using gasoline engine for his power. 2WH has a new junior op. He visits 2II and 2ACU one Sunday and 2NS and 2OF the next. What happened to the phantom car, Jack? 2AMR not very active, has a 15 watt Bendix xmitter. 2ACT good QRP fone from batteries. 2TG still gets his share of 14 Mc. DX. 2ALK is the only one to have an AT20 going well on telephony. 2NS, with a new AMR300 receiver, is amongst the DX. 2IE heard one day, why not try again Phil? 2RF, Broken Hill, on 7 Mc. occasionally; rest of the gang prefer 14 Mc. We must not forget 2II with his push button all-band rig and f.b. quality. Please send Western Zone notes to 2QA, Nyngan.

NORTH COAST AND TABLELANDS ZONE

2AEU often heard on 7 and 14 Mc. using a modified class C wavemeter as a v.f.o. 2RK hopes to be

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more active in the future, now on 7 Mc. 2PA switches bands a lot, nice results from a folded dipole. 2AEY consistent on 7 Mc. fone. Bill is undecided on the design for the new receiver. 2AII makes a hole in 7 Mc.; busy on alterations to the AT20. 2NY is active on all bands. How's the c.r.o. Roy? 2SL has nice signal on 7 and 3.5 Mc. 2ZP on 7 Mc. fone and c.w. 2SH and 2PA report 2II holidaying at the Port and has lost some whoppers. Send notes to 2AFP at Casino.

COALFIELDS ZONE

2XT still mainly on 7 Mc. fone. 2YO busy with service work and not on much; talks of a 14 Mc. rotary and new rx. 2KZ gets fine results from 4 half waves in phase on 28 Mc., and the xmitter goes down to 50 Mc. Has a 28 Mc. rotary under test. Nil heard of 2DG and 2TY. 2LB QRL in Sydney with examinations. 2MK after working on 7 and 14 Mc. turns up on 28 Mc. with a plumber's delight. 2ADT still going strong on 28 and 14 Mc., 60 odd countries on 28 Mc. fone. Jack is the local grinder and can be found on many frequencies; toying with idea of xtal filter for new rx. 2PZ still collecting much gear and threatens to be going strong in about 4 years! Now on 7 Mc. fone. 2YL with new rig on 7 and 3.5 Mc., 109 countries up post-war, has ideas of building up new rx. and something for 50

Mc. 2VS reports a contact on 166 Mc. between 2VS and 2BZ, the first in Newcastle? Send your notes to 2YL at Cessnock.

SOUTHERN ZONE

2OJ, like the Arab, departed up north on holidays, the rx is being revamped, Army job used now. 2GG with new 3 stage job (6V6, 6V6, 807) knocked off some Yanks, nice work. 2ANQ steadily rebuilding rig and associated gear. 2VK occasionally splits ether and enjoying his leave. 2APW goes on leave in May and hopes to bring back pieces to go with recently acquired 455 Kc. xtal (ex-W.I.A.) for rx. 2EH sends the dope from Wagga, tnx. 2BW, 100 watts to 813, 28 and 14 Mc. verticals and good DX. 2TH, p.p. 809s and how the DX comes back. 2PJ post-war Ham prefers c.w. to fone. 6V6 and 807 rig, and rebuilding v.f.o. 2AID, 809 does honors on 7 Mc. fone and c.w. Also has two 60 ft. sticks (wish I had them, 2APW). 2ANT dwells under shadow of 2EH's zepp, why not call on Ern and give us the dope.

Mr. J. MacIntosh (VS2AA) would be extremely grateful to receive replacements of cards which the Japanese looted. The two call signs affected are VS2AF and VS1AA, and the period is 1934 to 1939. Mr. MacIntosh will be delighted to receive a card confirming any of his old contacts. The address is Mr. J. MacIntosh, Postal Department, Kuala Lumpur, Malaya.

VICTORIA

Secretary: A. B. D. Evans, VK3VQ,
Box 2611 W.G.P.O., Melbourne.

Meeting Night: First Wednesday of
each month.

Meeting Place: Radio School, Mel-
bourne Technical College.

"FOOD FOR R.S.G.B." APPEAL

At the general meeting of the W.I.A. Victorian Division, held on the 2nd April, a proposal to establish a "Food for R.S.G.B." Appeal was agreed to and a committee consisting of VK3AJE, VK3ALE, VK3UW and VK3UM was appointed to conduct it.

The newly-formed committee commenced operations immediately and from a door collection and Disposals gear sale raised £20 for the night. The Division Council agreed to contribute at the rate of 1/- for 1/- raised on the door collection, which amounted to £13/14/-.

The General Secretary of the R.S.G.B., G6CL, was contacted by Airmail, notified of the scheme, and his co-operation sought on the distribution of food parcels at his end. A letter was received back from G6CL, conveying his deep appreciation to all concerned, of the "true expression of the Ham spirit."

The committee immediately dispatched 14 food parcels and two parcels containing soap, to G6CL who is arranging distribution. This commitment cost £15/13/-.

The attendants at the last general meeting on the 7th May, again made very generous contributions to the Fund and this time £16 was realised in the box collection. The Committee here wish to convey their most grateful thanks to both VK3JJ and VK3XJ who have made available gratis, two 813 tubes and sockets for sale. These sales will be conducted at the June and July meetings and proceeds will go to the "Food for R.S.G.B." Appeal.

To date, four broadcasts on the Appeal have been made from 3WI. These broadcasts have appealed to the country amateur for donations to the R.S.G.B. Appeal. No doubt, due to various circumstances, the results of these broadcasts have been disappointing. The Committee therefore consider that volunteer organisers should be appointed in each of the country zones, to contact zone amateurs in person.

VK3YV, Howard Wohlers, has been appointed official "Food for R.S.G.B." representative in the N.E. Zone, while VK3QC, Bruce Plowman, fills the same position in the S.W. Zone. Amateurs in these Zones may now send donations direct to these organisers.

The committee would be very glad to receive names of any country amateurs willing to conduct this worthy Appeal in their zone. It is intended

that these volunteers should become members of the committee. Names should be sent to the Secretary at the earliest. When the zone organisers get into full swing, special acknowledgements of zone donations will be made in the weekly broadcasts through VK3WI.

Finally, the committee appeal to all to keep the donations rolling in and thereby give the Appeal the success it so justly merits. Cheques, money orders, postal notes, etc., should be made payable to the Wireless Institute of Australia, Victorian Division, at Melbourne, and a note enclosed stating that the money is for the "Food for R.S.G.B." Appeal.

For further news of the Appeal, tune your sets to VK3WI on 7 Mc. every Monday night at 7 p.m.

MEMBERSHIP

Past members when seeking re-admission to the Victorian Division will be required to submit a new application form and pay 2/6 entrance fee if they have been unfinancial for a period exceeding twelve months. The above was passed at Council meeting on 13th May, 1947, and is effective forthwith.

T.A.C. NOTES

Committee.—Due to pressure of business, the present Chairman of the T.A.C., Herb Stevens (3JO), has found it necessary to hand in his resignation. Consequently, at the last Committee meeting, a general re-organisation was discussed. The Committee elected George Glover (3AG) as the new Chairman, and Bill Mitchell (3UM) as Secretary.

We must here mention the sterling work done by our retiring Chairman during the very difficult period of the war years, and hope he may still find time to carry on the good work he initiated with the T.A.C.

V.H.F. Group.—At the April meeting of this group, a very interesting and informative lecture was delivered by Dave Medley (3MJ) on V.H.F. receivers. The substance of this lecture is to be published in an early "Amateur Radio." Les Wirsu (VK-3ALW) provided an interesting talk on "1300 Mc. Technique" at the May meeting.

Receiver Group.—Due to transport difficulties, the attendance at the inaugural meeting of this group was limited. However, a general discussion on noise limiters took place, and it is intended to give a visual demonstration on the c.r.o. of noise limiters in operation at the May meeting.

Standard Frequency Transmissions.

—By the time these notes appear in print, standard frequency and band edge location transmissions will be under way. Details of future services will be given over VK3WI in the weekly broadcasts.

Libraries.—New books received this month are Philips Manual of Practice for Servicemen, and the A.R.R.L. Handbook for 1947.

New items of equipment have been added as follows:—

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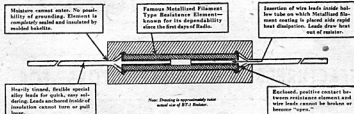
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QUEENSLAND

Secretary (acting): F. Nolan, VK4JU, Box 638 J, G.P.O., Brisbane.
Meeting Place: State Service Building, Elizabeth Street, City.
Meeting Time: Last Friday in each month.

At the general meeting held on Friday, 2nd May, Mr. Herb. Sprenger (VK4ES) gave members an account of proceedings at the recent Convention. As the affair is reported in Federal Notes, there is no point in repeating it all here. The decisions made at the Convention were duly ratified by the meeting. One of the steps taken at the Convention was to increase the price of "Amateur Radio." This, among other things, to assist in finding the where-with-all to pay the Federal Secretary when appointed. The increase will, in the case of this Division at least, be probably borne without additional membership charges.

The VK4 Division is in a position to obtain a Disposals Transmitter, the said job to serve as a basis for a permanent 4WI. In order to purchase same it has been decided by Council that Council members will contribute sufficient funds to make the purchase, thus conserving Institute funds, which are not as high at the moment as one could wish. The contributions by Council members will, of course, be in the form of a loan.

Speaking of 4WI you country men will be pleased to know (if you have not been listening to 4WI) that we are going to give the broadcasting of lectures a trial. The first one, by 4FN should present no difficulty and we will endeavour to put them across when ever possible.

There's not much news this month, the Annual Dinner having stolen the show, but one more point in closing—it has been decided to retain the present room on a monthly basis to assure continuity of tenure until a permanent room can be found, ahem!—at a suitable rental.

1947 ANNUAL DINNER

The second post-war Annual Dinner of the Queensland Division was held at the Anzac Hotel, Wickham Terrace, on Wednesday, the 23rd of April, and was attended by some forty-six members and visitors. The Radio Inspector's Department was represented by the Chief R.I., Mr. Conry, and Mr. Graham. Several representatives of the trade were also present and during the course of the evening the President (Mr. A. E. Waly, 4AW) reminded the gathering of the willingness of the trade to assist by donating pieces of apparatus for use as prizes during the evening.

In opening the function the President extended a welcome to all present and proceeded to outline the Institute's work during the past twelve

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months. On the credit side he mentioned the inauguration of the very successful 4WI broadcasts; the satisfactory QSL service, 489 parcels of cards being handled in 12 months; the Library service, still in its infancy, but what a promising toddler! Also progress in the V.H.F. Section, not forgetting 4HR's achievements in that field.

The hope was expressed that the coming year would see more sectional activity; pre-war phone, c.w. and country sections being cited as examples. The President also discussed the ceasing of student classes, pointing out that under present conditions it was not possible to run classes on a sound business-like basis. It was promised, however, that as soon as conditions permitted, classes would be resumed.

Mr. Conry, the Chief R.I. in VK4, conveyed to the assembly his pleasure in being present and spoke of the excellent relations between the Institute and his Department. He complimented the Queensland Amateur on his high standard of behavior as compared to other States, and continuing in the same vein as his chief, Mr. Graham appealed for the Amateur's co-operation in stamping out the pirate menace.

Mr. Herb. Sprenger (VK4ES), Queensland's delegate to the recent Convention, gave a brief outline of that event and promised to answer any questions relating thereto at the next general meeting (see report elsewhere).

We are sure a good time was had by all those present, amongst whom were VK2AC, VK4s: AW, RT, ES, ZU, HR, KB, KF, KH, VJ, TR, PR, AB, MW, CH, JF, ZX, FJ, UL, SR, UB, CZ, CS, FY, FL, BN, RC, FB, FN, DL, AP and friend, and Messrs. Conry, Graham, Edgar, Foster, Kerschner, Gabriel, Beale, Gilligan, Huxley, Crockett, Coles, Volker and Birmingham. To those who sent their apologies we say "Hope to see you next year."

SOUTH AUSTRALIA

Secretary: E. A. Barbier, VK5MD,
Box 1234 K, G.P.O., Adelaide.

Meeting Place: 17 Waymouth Street, Adelaide.

Meeting Night: Second Tuesday of each month.

The monthly general meeting for May was held at Kelvin Buildings where members were the guests of the Society of Illuminating Engineers. The original guest speaker being indisposed, Professor Sir Kerr Grant filled the breach and gave an interesting and informative lecture on "Neon Gas and its Application to Illumination." It is not necessary for me to elaborate on the lecture as the Professor is an old friend of ours

and always combines showmanship with technical ability. Naturally no Institute business was transacted and Hal Austin (President) proposed a vote of thanks to our hosts for the splendid evening, which was received with acclamation.

The writer has been appointed sub-editor for this magazine for VK5. I like the title, but if my experience is any guide it is just another method of handing out some more work. Ho Hum!

Any Divisional Secretary or Treasurer having trouble in securing new members should try my scheme. Any of the young men who come to call on my daughter, must first join the W.I.A. before they get past the kitchen. If you doubt that this works ask associate member Bob Turner.

The appearance of the "Gremelin" in "Amateur Radio" has been received with mixed feelings in VK5. Some like it, others dislike it. Personally, I am neutral as well as being pure.

I am in receipt of a letter from an anonymous reader who says that he has never read notes like mine, and also includes some choice tit bits concerning a certain very high frequency meeting. Regarding the tit bits they will come in handy should I ever decide to become a professional black-mailer, but as for my notes I don't know whether to feel complimented or insulted.

Several members have commented to me that although Bob Manuel (5RT) spent quite a lot of time during his recent lecture in explaining the fact that super regens were taboo, he still used one for his practical demonstration. What about it Bob?

It did not take long to find a job for new Council member George Ramsay. He is in charge of the newly formed disposals scheme patterned on the VK6 idea. No information as yet to hand regarding results, but if you want to buy or sell, George is your man.

One of the latest QST articles was having a slap at this "we" business on the fone bands. Apparently quite a few of the phone boys are never quite alone in their shacks. They have a decided tendency to eliminate the first person singular in favour of the first person plural. They say "we" did this and "we" did that or "we" are going out or "we" are stopping in. Why this "we" business has crept in is beyond most Hams. Possibly they have little men surrounding them or on their shoulders. "We" don't know. My apologies to QST.

FIELD DAY

The Sports and Field Day has now become a pleasant memory, and it is with regret that I say that I was unable to attend through no fault of my own. Having a wife and "seventeen" small children necessitated my

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working on this particular Sunday and therefore it is with pleasure that I hand the pen over to Joe McAllister who will describe in his own words the wonderful time that was had by all.

Well the Sports and Field Day of the W.I.A. South Australian Division arrived at long last, and with it a beautiful Autumn day, something to tempt even Jack Strafford out of his shack. The bus, attended by an escort of members' cars, left the Adelaide Railway Station at 10 a.m.,

after Hal Austin had taken a photo or so. Picking up many members along the route we eventually arrived at National Park about 11.15 a.m. The oval was a picture of green sward and leafy trees, an ideal setting for a Ham gathering. The first item was the hidden transmitter, attracting two starters only, the other promised starters were apparently too busy policing the V.H.F. bands to see that no super-regens were being used.

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The committee meanwhile were organising other items such as married and single women's races, throwing the rolling pin, three legged race, pinning the tail on the donkey (no not you Wykeham, sit down), and bowling at the stump. Doc Barbier apparently had the idea that he had to miss the stumps, or were they wides?

The cricket match was quite exciting although one or two would have scored more if they had held the bat by the thin end. Of course lunch was held during all this excitement, and with all the hot air being blown about at the copper, the water should have boiled much quicker.

The 50 Mc. gang eventually arrived back with harrowing tales of the miles and miles they had walked, through tennis courts, bushes and high grass, etc. The hidden transmitter tricked them at times with the signals bouncing around off hills, wire netting and trees.

Ice cream and cool drinks were in demand by the kiddies, and the committee took a dim view of Cec Baseby rolling his pants up with his knees and sneaking off with a few ice creams. There are still a few empty bottles missing so would not be surprised to hear on the air that somebody has a couple of lemonade and lime juice bottles in push pull, modulated by a pair of stone ginger beer bottles in class AB.

The code reception through interference competition was a wow. The signals came over the p.a. and the bonnets of the cars were the writing desks. Then there as the lucky call sign competition with all manner and shape of QSL cards adorning the Hams. The highlight of the day was the Hams' race in which Dud Wilkinson (5WD) showed a surprising turn of speed and flashed over the tape with the speed of Bernborough.

The best built Ham's receiver attracted plenty of attention and the winner (5NG) is to be congratulated. The ching wagging and rag-chewing needs no description on my part and as for the final din when all the cars were sending morse code as they left, well! They say that the birds and beasts have not returned to National Park yet.

The President (Hal Austin) in presenting the trophies thanked all who had come along and the energetic committee for making possible such a wonderful day, and so until the next Field Day this is Joe McAllister saying thank you and here's hoping to see you next year.

When I had completed my getting back on the air, it was my intention to visit a few Ham shacks and have a look-see, but after sending the way that Mrs. Hancock handled that rolling pin at the Field Day, I am somewhat deterred!

There was an unofficial entry into the hidden transmitter at the Field Day when Bronte Nitschke and Wykeham Bailey, after a couple of hours tramping over the hills and dales using their scoutcraft and bird-law or something, finally bailed up a poor innocent truck driver and asked him if he had a hidden transmitter. The driver said "yes" "but it belongs to the Electricity Trust and is on 9 meters." Well! Well!

WESTERN AUSTRALIA

Hon. Secretary: W. E. Coxon, VK6AG, Howard St., Perth, W.A.

Meeting Place: Builders' Exchange, St. George's Terrace, Perth.

Meeting Night: Second Monday in each month.

The April meeting was held on the 21st of the month, with 6GM in the chair.

After normal general business was handled a couple of questions were put up by an anonymous contributor, and caused some diversion in the efforts to shed light on the subject.

6LW exhibited his portable transmitter used during the holidays at Gnowangerup, and it left many wondering where the S8 signals came from. A practical demonstration made it plain. An ingenious exchange of coils, etc., made it adaptable for all bands from 3.5 to 50 Mc. A suitable receiver to go with it is in process of growing up. A practical demonstration added interest to the description.

6EV then took the floor and 50 minutes devoted to the inner workings of a home made Bendix type frequency meter was very well spent. A discourse on the finer points added value and a practical test was made to determine the frequency of 6LM's rig, when on the 7 Mc. band. This demonstrated the co-operation that exists between W.A. Division Members, or was it the choice of lectures and subjects that made the combination so f.b.

The surplus gear officer did some good business during the evening. It is apparent that this activity is proving popular.

The meeting night has been changed to the 2nd Monday in the month and seems to suit everybody. The meeting closed at 11 p.m.

The May meeting was held on the 12th of the month, with 6GM presiding. Those attending were as follows: VK6s: PX, HL, BG, RF, EV, RU, KW, FC, LW, GB, SA, HM, DD, TX, MB, YZ, DS, DJ, FR, DF, AD, DN, GA, PW, AS, WT, LM, GC, LR, AG, GM and FL.

General business was speedily dealt with, and it was decided to hold a Forty Metre contest day on the 29th of June. All members will be given full details in the Monthly Bulletin.

A Forty Metre Field Day is planned for September, the June Contest day being a preliminary try-out, to arouse interest.

6LR, Len Reading, was fawelled, for he is leaving VK for ZS. Look out for a new ZS call sign as Len hopes to be back on the air in South Africa. We all wish him a good trip.

PERSONALITIES

6HM is still very active on the 50 Mc. band. Charlie has quite a fine beam for this band. — 6DF has just completed a very f.b. 50 ft. steel tower. Hopes to have a triple 50, 28 and 14 Mc. array erected in a week or two. Maurie is doing things in fine style, fitting power drive mechanism as well. Maurie was W.A.C. on 28 Mc. phone during Easter, apparently making his mind up quicker about this death trap for aircraft. — 6RW, after a long absence from the air, Mick has turned up again with his usual f.b. signal. Welcome back again a.m. — 6BC has some fun, retrieving his motor boat at Rockingham the other week after a 60 m.p.h. gale. Now we know the real reason why Bert is still not on the air. — 6FL has purchased a tower for his beam, and it shouldn't be long before he has his array fitted up nicely. — 6DD is a very consistent VK6 on all bands. His V beam does a good job on South America on 28 Mc. John can certainly push his signal in that direction. — 6HL is another tower erector, "to make the signals go places, as Harry puts it. — 6WS heard on 14 Mc. in between his numerous trips around the State. How's the new exciter progressing skipper? — 6NL is becoming beam minded, and we think he will soon be erecting one. What about a Rhombic in the surrounding bush Vic? — 6GM has built up quite a nice compact 50 Mc. rig with an 807 in the final. The 50 Mc. gang have now a new station to include in their regular rag chews.

6KE heard on the air nightly with a nice signal. Keith is realising too that it takes an efficient antenna to get out from among the QRM these days. — 6AG is back on the air again on 7 Mc. He has some fine gear and we hope to hear him on the air more frequently. — 6 "Radio University" still keeps the air in Subiaco from getting cold. "Keep the electrons moving" is his motto. — 6KW has been spending some time tuning up the beam with the able help of good old Bill and 6RU (you ought to have seen Jim perched on the neighbour's roof with a field strength meter). — 6WT is back on the air again, at his new QTH at Waterman's Bay. A new receiver is part of Dave's gear and we believe it is the goods. — 6MU has been heard and worked by local VK6s in Perth over the last few weeks. Some of that queer short skip

that happens only occasionally. Believe that he W.A.C. on 28 Mc. phone during Easter. — 6DJ heard regularly pouncing away and working a wealth of DX. How many countries up now Bill? — 6MW often heard from the northerly direction pumping forth the herbs in the direction of W. We believe Bill has the big transmitter on again now and is working some good DX. — 6PJ another 28 Mc. phone addict to make W.A.C. during Easter.

The lack of news from country Hams is disappointing, and 6KW would appreciate any notes from this direction. Send them in before the 10th of the month please.

TASMANIA

Secretary: J. Brown, VK7BJ
12 Thirza Street, New Town.
Phone W 1328.

Meeting. Place: Photographic Society's Rooms, 163 Liverpool Street, Hobart.

Meeting Night: First Wednesday of each month.

The April Council meeting took place at the residence of C. Walch (7CW), Osborne Ave., Sandy Bay, on the evening of Friday the 18th. Present were 7LJ in chair, 7BJ, 7CJ, 7CW, 7RF, 7CT and 7PA.

Minutes of previous meeting and correspondence were read and confirmed. Five applications for Associate Membership were received and passed for submission to the next general meeting. General business constituted taking the report of 7BJ, our delegate to the recent Conference. Joe emphasised the fact that the Conference was no holiday and from the report one can appreciate his point of view and we must say that the work done reflects credit on all concerned.

Maybe, with some items, we would have liked somewhat different outcomes but it would be an unusual position to find everybody in agreement all the time and no doubt if the work done, and the results achieved, can be put fully into effect our organisation must benefit.

General uniformity is something that should aid in the general organisation of such a scattered body as ours, subject of course to sufficient latitude being left to individual Divisions to allow for the meeting of matters peculiar to the Division. Items that were referred back to Divisions for consideration are to be put before the next general meeting when our decisions will be made.

At 11 p.m. Mrs. Walch called a halt for supper, to which all did justice, and after thanking the good lady for the trouble she had taken, the final details were settled down to and the meeting concluded at 11.30 p.m.

May general meeting was conducted to a good attendance at 8 p.m. on the 7th at the usual rooms. With the

Conference report to be taken and matters dealt with, it is a pity more of the gang could not have been present.

Those present were 7LJ in chair, 7BJ, 7CJ, 7RF, 7CW, 7OM, 7GR, 7CT, 7YJ, 7MY, 7XA, 7TR, 7CL, 7NL, 7LL and 7DW: Messrs. R. Harris, M. Watson, Koglin, Kruse, Milne, Fulton, M. Davis and D. H. Watson. Visitors: S. Cooper and D. Peek. Apologies from 7AL, 7ML, 7RY, 7LE, Messrs. R. Allenby and Durkin. Minutes of pre-

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vious meeting were read and confirmed. 7LJ welcomed the two visitors.

7XA, desiring to leave early, then reported the progress made with the "Food for Britain" Appeal. 26 parcels being on their way up to just before Easter. He read a letter from G6CL expressing their gratitude and assuring us of their intention of giving every possible attention to distribution. G6CL said he had recently seen Chas Miller, VK7CM.

The "hat around" realised a further £7/6/6 as a final count, there being some confusion caused with odd pennies at the first and subsequent counts, everybody trying to create an even money balance at the same time, until the panic settled down. This was the best individual collection to date and a round figure total is somewhere over £22 by my reckoning, next month I will endeavour to procure the committee's figures.

The Field Day conducted on 20th April was again a success, in fact some even claim it even better than before.

Our Annual Dinner was then discussed and 14th June was decided upon and a sub-committee, consisting of 7RF, 7CT and 7CW, has been elected to attend to arrangements. 7MY has undertaken to attend to the accommodation and possible billeting for any northern or country members attending.

At a suggestion from northern members some alteration may be made to the rag-chewing sessions but it is proposed to discuss it with those who attend the annual meeting first, Sunday mornings have been suggested in lieu of Friday nights with an alternative of one Friday night and one Sunday morning each month to give each fancy an opportunity.

The main item of the evening was then brought forward when 7BJ took over to report the work and results of the Conference. General satisfaction was felt at the result of the work done and it is hoped the outcome of resolutions that concern Departmental matters will be received and treated in the manner we desire by the officials concerned, Conference has done its part.

Unanimous approval was given by those present to several proposals put up at Conference and referred to the Divisions. Uniform Constitution (subject to not interfering with any Divisional matter that is peculiar to that Division), a full-time paid Secretary for Federal Executive as detailed. Termination of the Divisional year at the same approximate time, thus allowing Federal Executive to be in a better position to know their financial position, etc. (per-capita income, etc.). The inclusion of "Amateur Radio" with the full members' annual subscription. (This necessitated

the increasing of the effective annual subscription to those concerned although actually, with magazine included, it shows a small saving over the two.)

This resume is to give those who were not able to be present an opportunity to know something of the outcome and as a guide only, details here being impossible. A hearty vote of thanks to our delegate was carried with acclamation.

VK7 is concerned about the new list of countries being published in U.S. magazines and eliminating VK7's distinction as a separate country and our Secretary has been directed to write to ARRL and CQ objecting to same.

JOTTINGS

7AG and 7LJ have contacted 3CN since he was here recently and 7LJ had a long session on his last contact, it's as well the 30-minute limit has gone Lou! 7AG has been working portable in the Waddamana district recently—keeping 7JH company?

7WI broadcast on Friday 9/5/47 was run by 7BJ in 7CT's absence, but owing to trouble in the mike circuit, Joe put in quite a lot of the time talking to himself.

Official rag-chew night 7BQ, 7AB and 7XL were worked here and others are looked forward to. Local lads are asked to respect these even-

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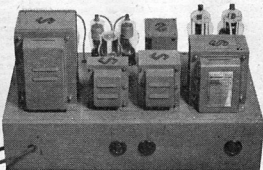
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ings and observe some system of contact, possibly the worst worry is other States calling our lads, possibly not knowing just what is on. Maybe if all States had a common roster night for intra-State rag-chewing we could get away from this trouble.

7CW visited Sydney recently on holidays. He returned with a "mystery box." One way of overcoming the Disposals problem, but we hope it doesn't exceed the power limits.

Heard on phone on 7 Mc.—7DH, 7ML, 7MY, 7LJ is building new modulator so he won't be long. 7 Mc. conditions so poor lately that 7LJ suggests may have to migrate to 3.5 Mc. with Interstate Traffic Network skeds.

THE FIELD DAY

The transmitter was that used on previous occasions, and made available by 7CW. It was located and operated by 7LJ and party. All previous rules and conditions remaining. Owing to the lateness of the season this year, another glorious day was experienced and as 7LJ elected to go inland for a change, this glorious atmosphere was more evident.

Tea Tree, a district on the eastern

side of the Derwent, about 12 or 13 miles air-line from the G.P.O. and in a northerly direction, was selected and by the courtesy of a local resident of the district, Mr. Newnham, on whose property is a recreation ground bounded by a creek and willow trees, the setting was ideal although cover for the party's cars was not so good.

For those who are not familiar with our aspect, the eastern shore viewed from Hobart is a rather tricky area, the Derwent can be crossed at three points and as many roads, leading in various directions, dissect the area some confusion is easily possible as was borne out when the first cars appeared 50 minutes after the start, only to head off on a by-road in the opposite direction after taking a bearing almost on top of the transmitter, much to the satisfaction of the operating party.

7CW, 7BJ and 7OM were seen approaching at 1050, take bearings at a point opposite the xmitter and at the junction of a by-road and then proceeded away again via the by-road.

A few minutes later, 7LL appeared and did likewise, then some 10 minutes later he was noticed returning

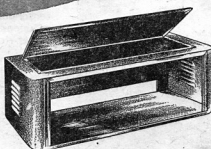
with the previously mentioned three cars in close pursuit, further bearings taken at similar places as before apparently decided them, and a cross-country obstacle race by the four concerned, over fences and across the water jump, with 7LL in the lead, closely followed by 7BJ, 7CW and 7OM ensued and resulted in a split second finish in that order as stated, even a dead-heat was quite on the cards and a camera finish would have had much to commend it.

Twelve or more cars participated and only one had to finally "open his envelope." The party constituted Hams, wives and families, and friends and after lunch an afternoon of chatter and amusement was enjoyed.

A pennant is being provided for these events to be a perpetual trophy which will be held by the winner until he is next defeated, and this will then be one of the ceremonies of the day—presenting the pennant. This will go to 7LL at present who will retain it until the next competition or until defeated and as there is no further arrangements for the present maybe he will at least hold it until after the winter.

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IN REVIEW.

A.R.R.L. HANDBOOK, 1947 EDITION

Designed and written as an amateur radio communications manual, the 1947 Handbook retains its accent on practical utility, the treatment of radio communication problems having a down-to-earth constructional approach rather than a purely academic one. Its appeal to all in the field—from beginning experimenter to advanced amateur—is based on the thorough but non-mathematical presentation of comprehensive subject matter.

The nine chapters of the section devoted to principles and design comprehensively cover the theory of radio communications and design of amateur transmitting, receiving, radiating and measuring apparatus. Starting the reader with fundamentals of electricity and radio, it then presents to him a chapter on the operation of vacuum tubes, including circuit applications, from simple diodes through cathode-ray tubes to klystrons and magnetrons. There follow chapters discussing radio frequency power generation methods, radiotelephony, transmitter keying, receiver theory

and design, power supply, wave propagation and antenna systems.

The construction section of the present edition, first in five years to be produced wholly under peacetime conditions, has undergone extensive revision. Much new material has been added as a result of the year's work in the new A.R.R.L. laboratory in design, construction and thorough testing of apparatus embodying new ideas which were necessarily dormant during the war period. Beginning with a treatise on workshop practice, it then turns to a chapter on receiver construction, complete with all details for the building of various types of receivers, from a simple two-tube affair to an eight-tube amateur-band communications superheterodyne. The construction of transmitting apparatus is likewise facilitated by a profusely illustrated chapter, containing also data on power supplies, metering, control circuits and station layout.

Almost a text in themselves, the chapters on receivers and transmitters for the very high frequencies have been completely re-written to include descriptions on construction of apparatus geared to the ever-changing trends of V.H.F. technique, yet still retaining features appealing to the beginning experimenter in this comparatively new field.

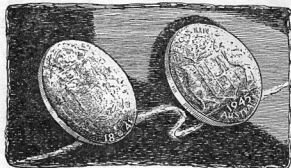
Under the heading "Emergency and

Portable," a discussion of the design and construction of appropriate apparatus offers valuable aid to the fore-handed amateur who wishes to be prepared for any eventuality. The constructional section of the Handbook is concluded with a chapter devoted to the design and building of measuring equipment—monitors, frequency meters, cathode-ray oscilloscopes and similar laboratory apparatus.

The third division of the 1947 Handbook is composed of a completely up-to-date revision of the tables of vacuum tube characteristics and miscellaneous data, and a chapter of timely information concerning amateur radio operating. The sixteen tables of vacuum tube characteristics occupy fifty pages and include complete data on more than a thousand tube types as well as base diagrams for socket connections. Miscellaneous formulae, charts and tables round out this storehouse of information.

The Radio Amateur's Handbook (twenty-fourth Edition, 1947), by the Headquarters Staff of the American Radio Relay League, of 632 pages, 6½" x 9½", including catalogue section and 10-page topical index, 1,257 illustrations including 96 charts and tables, 171 basic formulae. Available in Australia shortly, price 11/6 approximately.

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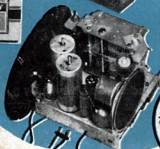
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